

**WHAT IS CLAIMED IS:**

1. A composition comprising a conjugate of an antibody exhibiting binding specificity for an extracellular epitope of c-erbB-2 protein and a plant derived toxin, wherein said toxin is pharmacologically effective against neoplastic cells and is selected from the group consisting of gelonin, full length recombinant gelonin, functional gelonin fragments and functional gelonin derivatives, wherein said plant derived toxin has a lower effect on cell death or arrest of cellular growth when not conjugated to said targeting moiety.

2. The composition of Claim 1, wherein said antibody is an intact full-length immunoglobulin.

3. The composition of Claim 1, wherein said antibody is an intact full-length immunoglobulin.

4. The composition of Claim 1, wherein said antibody is an Fv fragment, and the  $V_H$  peptide is conjugated with said toxin.

5. The composition of Claim 1, wherein said antibody is an sFv, and the V<sub>L</sub> peptide is conjugated with said toxin.

6. The composition of Claim 1, wherein said antibody  
5 is a single chain antibody.

7. The composition of Claim 1, wherein said conjugate is a fusion protein between said antibody and said toxin.

8. The composition of Claim 7, wherein said  
10 composition is recombinantly produced by fusing the gene encoding said antibody to the gene encoding gelonin.

9. The composition of Claim 1, wherein said antibody  
15 is selected from the group consisting of TAb 250 and BACH-250.

10. A pharmaceutical composition comprising the composition of claim 1 and a pharmaceutically acceptable vehicle.

11. A method of treatment against neoplastic cells, comprising the step of administering an effective dose of the composition of Claim 1 to said cells.

5 12. The method of Claim 11, wherein said neoplastic cells are characterized by over-expression of c-erbB-2 protein.

13. The method of Claim 11, wherein said neoplastic cells are selected from the group consisting of mammary carcinoma cells, ovarian carcinoma cells, lung carcinoma cells, salivary gland carcinoma cells, gastric tumor cells, colon adenocarcinoma cells, and bone marrow leukemia cells.

14. The method of claim 11, wherein said treatment is used against neoplastic cells in a human or an animal.

15. A composition comprising a conjugate of tumor necrosis factor to an antibody exhibiting binding specificity for an extracellular epitope of c-erbB-2 protein.

20 16. The composition of Claim 15, wherein said conjugate is a fusion protein between <sup>a</sup> said single chain antibody and tumor necrosis factor.

17. The composition of Claim 15, wherein said conjugate is recombinantly produced by fusing a gene encoding said single chain antibody to a gene encoding tumor necrosis factor.

5            18. The composition of Claim 15, wherein said single chain antibody is scFv-23.

19. The pharmaceutical composition, comprising the composition of claim 15 and a pharmaceutically acceptable vehicle.

20. A method of treatment against neoplastic cells, comprising the step of administering an effective dose of the composition of Claim 19 to said cells.

21. The method of Claim 20, wherein said neoplastic cells are selected from the group consisting of mammary carcinoma cells, ovarian carcinoma cells, lung carcinoma cells, salivary gland carcinoma cells, gastric tumor cells, colon adenocarcinoma cells, and bone marrow leukemia cells.